

Nimble Intelligence: *Enterprise BI Mashup Best Practices*

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BI mashups unite diverse data and application components, on the Web and within the enterprise, to support better, faster decision making.

BI for the Masses

“BI for the masses” remains an elusive goal for government and the private sector: the ability to deliver meaningful, timely information drawn from diverse sources in a usable and useful form. Business intelligence is, after all, about much more than reporting and analysis software. BI, in its most basic sense, is about delivering in-time insights to support informed decision making. Yet traditional BI too often does not provide the required mix of capabilities, speed, ease-of-use, and agility, at the right cost point.

Defining mashups

Enter mashups: user-centric applications that unify disparate data and services to respond to ad-hoc and on-going analytical needs at personal and enterprise scales. Mashups foster collaboration that bridges “islands of information,” on the Web and within the enterprise. They are defined by flexibility. Done right, they are simple to use and enable self-service, do-it-yourself BI. They extend BI to meet the needs of broadest range of users and enterprise stakeholders to date.

Best practices

Best practices guide organizations in creating and consuming *mashable* data, applications, and services, including embeddable mashups that are sometimes known as *mashlets*. They describe use cases and usage scenarios as well as (from the IT perspective) technical ingredients -- architecture and infrastructure -- necessary for successful implementation. They link BI-mashup capabilities to the business case, to the benefits users and providers can realize via BI mashups. This paper lays out BI-mashup best practices and provides an implementation roadmap for their successful realization. BI mashups are an

exciting technical development that promises great benefits when done right!

The Business Case for BI Mashups

BI mashups provide a compelling route to self-service BI, the ability for end users to access the data, applications, and services they need, in the forms they need them, without IT intervention. They enable users to see and do more by bringing in third party data and Web services as needed, without creating new data silos, and by eliminating custom development, they deliver insights faster. For these reasons, BI mashups enhance capabilities and offer greater user satisfaction while reducing support costs.

Further, BI mashups extend the reach of data, application, and service providers. They provide a channel for drawing additional profit from enterprise assets.

When Do Enterprise BI Mashups Make Sense?

For end users (and enterprise IT staff who support them), BI mashups make sense when:

- You have multiple data sources, some of which may be external to your organization, and you can't justify the time or expense of integrating all the data into a data warehouse for analysis.

Examples include spreadsheets, databases, and data warehouses and on-line news, financial market, weather, and reference data provided by government and private-sector organizations via APIs and Web services.

- Your work requires multiple analysis or presentation components, some of which are not offered by your organization's BI systems.

Examples include rendering user data on Google maps, use of specialized visualization widgets, and invoking semantic annotation services.

- Your business needs and data analysis problems -- some, most, or all -- are not

highly predictable. Preconceived approaches are not sufficient.

For end users and for IT staff, enterprise BI mashups make sense when:

- IT assistance would be (otherwise) required to create analyses with conventional BI systems, or the cost of using those systems is prohibitive.
- You wish to publish analyses for external use, “outside the firewall,” via formats such as *mashlets* that can be embedded in Web pages and portals.

For data, application, and service providers, BI mashups make sense when:

- You wish to empower end users to carry out do-it-yourself analyses.
- You seek to discover new markets and channels to expand use of, and profit from, your organization’s BI assets.

Who Uses BI Mashups and How?

There are many usage scenarios for BI mashups, and there are a variety of technologies and solution providers that successfully deliver them. Examples hint at the broad array of possibilities:

- [EveryBlock's Chicago crime section](http://chicago.everyblock.com/crime/)¹ allows the public to explore reported crime in the city of Chicago. It combines a timeline ranked lists by a variety of geographic areas and crime types with location-proximity and date search. All displayed items are drillable to incident-detail reports with accompanying maps.
- A JackBe powered mashup, [OceanSchedules.com](http://oceanschedules.com/)², provides a direct connection to shipping quotes and information about sailing schedules from Maersk, Hamburg-Sud, Hapag-Lloyd, and other carriers. The site performs a real-time database look-up in response to the user’s query – try a search for Tokyo (JPTYO) to Long Beach (USLGB) shipping – displaying results in a tabbed, tabular interface with user controls that allow easy information filtering and download.

¹ EveryBlock's Chicago crime section: <http://chicago.everyblock.com/crime/>

² <http://oceanschedules.com/>

- Capgemini’s [Logistics Tracking Dashboard](http://www.mashupshowcase.com/site/openmashlet.js?p?name=LogisticsTracking)³, also developed with JackBe technology, is a order-shipping logistics application for aircraft parts. It is part of Capgemini’s RAIN (RAPid INnovation) initiative, whose goal is “to help companies discover, develop and deliver sustainable new business models and so create a Service Oriented Enterprise (SOE).”
- The [Zillow Web site](http://www.zillow.com/homes/)⁴ embeds a mashup of sales listings data with maps and data from other sources within a larger real-estate portal that allows owners, agents, and community members to post to the site collaboratively.

These are just a few of many exciting BI-mashup examples. Studying them and looking at behind-the-scenes technical infrastructure, we arrive at BI mashup best practices.

Best Practices for Planning and Design

From the perspective of enterprise data and service providers, BI mashups mean data that has been merged, filtered, and/or transformed and then presented through standard formats and protocols or via *mashlet* application elements.

Top-performing enterprises look to best practices for guidance. For enterprises, BI mashup best practices include the following elements:

Focus on users

- Understand the role data plays in meeting your organization’s goals whether they involve mission fulfillment (government), profit (private sector), or quality and customer satisfaction (all organizations).
- Understand current and prospective users, use cases, and usage scenarios: who uses or might use your organization’s data, for what purposes, and how.
- Create a model that matches organizational goals to user needs, a

³ CapGemini’s Logistics Tracking Dashboard: <http://www.mashupshowcase.com/site/openmashlet.js?p?name=LogisticsTracking>

⁴ Zillow Web site: <http://www.zillow.com/homes/>

model for measuring data and service utilization -- via mashups versus traditional means -- and for computing return on investment (ROI).

Attention to design

- d) Study BI mashups supported by leading data and application providers -- their capabilities and how they are being used -- to understand what works and why.
- e) Mashups live and die on usefulness and usability. Ensure that yours both deliver business value and are easy to use.
- f) Prepare for diverse needs even if you can't anticipate every usage scenario.
- g) Many of the most successful BI mashups provide rich visualization capabilities: maps, charts,
- h) Plan mashup roll-out to ensure quality service delivery.

Quality service delivery

- a) Expose the datasets users need and ensure they are complete and timely.
- b) Adopt standard interfaces and access methods.
- c) Quality data is essential. Standardize data definitions and cleanse data.
- d) When necessary, guard data confidentiality and user privacy.
- e) Mashups are part of a Web 2.0 world. Foster collaboration and sharing.

Best Practices for Successful Implementation

Organizations will undertake a sequence of steps to make their data and services *mashable*.

1. Develop business and technical requirements that cover users, use cases, and usage scenarios and also accommodate unforeseen needs.
2. Extend your technical architecture to enable/accommodate mashups. Elements will include a mashup server that can access diverse data and service sources, interfaces for mashup composition, and connectors and APIs to support mashup delivery via Web interfaces, portals, and programmatic interfaces.
3. Create interfaces or adaptors as needed for existing data systems. Adopt SOA

(service oriented architecture) or REST (representational state transfer architecture) for services.

4. Evaluate, test, and deploy mashup server infrastructure that can expose data and application functions to mashup creators and consumers.
5. Monitor service delivery and utilization to ensure that you are providing the capacity and performance -- and also the right mix of data and capabilities -- that add up to user satisfaction.

Conclusion

This short paper has defined enterprise BI mashups, reviewed the business case, examined situations where mashups have proven their usefulness, and looked at real-world usage scenarios. It has presented basic BI-mashup best practices related to mashup planning, design, and service delivery and enterprise mashup implementation.

In the end, enterprise BI mashups are about delivering data-fueled business value to end users via self-service, do-it-yourself tools. They're about generating value from data. Their hallmarks include flexibility, usability, and speed-to-insight at lower delivery cost: fast, effective, accessible BI for the broad set of enterprise stakeholders. Done right, BI mashups hold great promise for the range of organizations -- government, nonprofit, and private-sector alike -- with data to share and data-hungry stakeholders. If your organization fits that category, the time is right to investigate, develop, and deliver BI mashups, guided by the best practices presented here.

About Seth Grimes

[Seth Grimes](#) is an analytics strategist with Washington DC based Alta Plana Corporation, founding chair of the Text Analytics Summit, text analytics channel expert for the BeyeNETWORK.com, and contributing editor at TechWeb's Intelligent Enterprise. He consults, writes, and speaks on business intelligence, data management and analysis systems, text mining, visualization, and related topics.